

SERVING COMMUNITIES

SAVING COMMUNITIES

# 2017 Annual Report Western Area Power Administration





# Mission

Market and deliver clean, renewable, reliable, cost-based federal hydroelectric power and related services

# Vision

Continue to provide premier power marketing and transmission services to our customers, as well as contribute to enhancing America's energy security and sustaining our nation's economic vitality

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## About WAPA

# W

APA is a power marketing administration under the Department of Energy that markets and transmits wholesale electrical power across 15 states through an integrated 17,000-plus circuit-mile, high-voltage transmission system.

Employees work around the clock to sell power and operate and maintain the transmission system that provides energy to:

- Cooperatives
- Federal and state agencies
- Investor-owned utilities
- Municipalities
- Native American tribes
- Public utility and irrigation districts
- Power marketers
- Joint power authorities
- Transportation districts
- Independent system operator corporations
- Regional transmission organizations

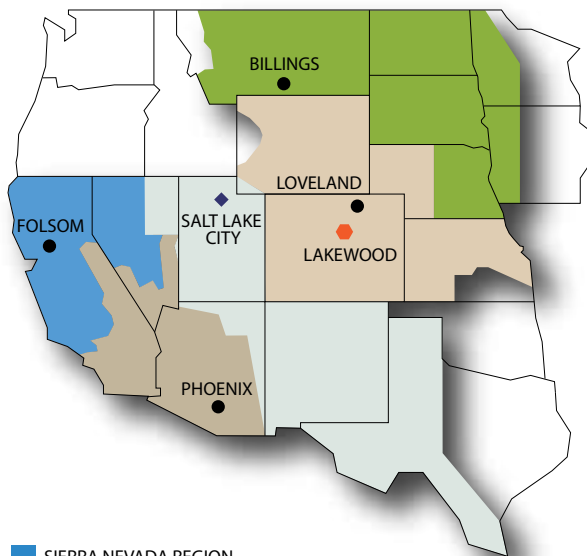
Our customers then provide electric service to more than 40 million people from Texas to the Dakotas, and from the lakes of Minnesota to the California coastline.



# Service and Marketing Areas

**W**APA delivers power from 10 rate-setting projects that encompass both WAPA's transmission facilities and the power-generating facilities owned and operated by the Bureau of Reclamation, the Army Corps of Engineers and the International Boundary and Water Commission. These projects are made up of 14 multipurpose water resource projects, one coal-fired plant and one transmission project. Power rates are set to recover all costs associated with power delivery, such as annual operating costs, the specific allocated multipurpose costs associated with recovering the federal investment in the generation facilities, with interest, and other costs assigned to power for repayment.

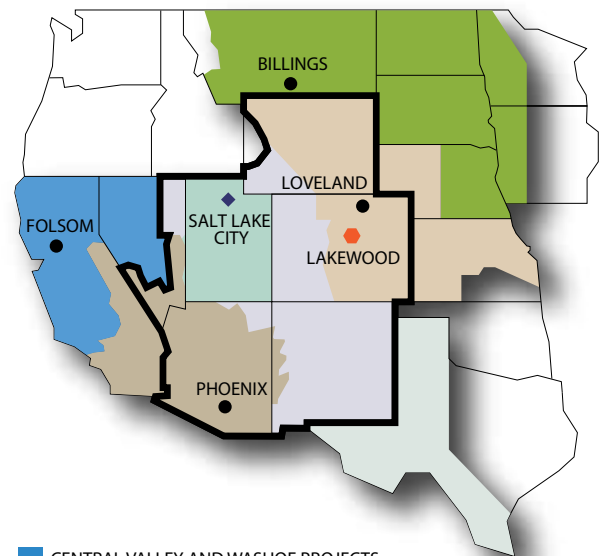
## Service Areas



- SIERRA NEVADA REGION
- DESERT SOUTHWEST REGION
- COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
- ROCKY MOUNTAIN REGION
- UPPER GREAT PLAINS REGION
- STATE BOUNDARIES
- REGIONAL OFFICE
- HEADQUARTERS
- ◆ COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER OFFICE

A service area identifies a WAPA region's geographic territory while a marketing area defines the boundaries of a hydropower project's customer base.

## Marketing Areas



- CENTRAL VALLEY AND WASHOE PROJECTS
- PARKER-DAVIS, BOULDER CANYON AND CENTRAL ARIZONA PROJECTS
- FALCON-AMISTAD PROJECT
- PROVO RIVER PROJECT
- LOVELAND AREA PROJECTS
- PICK-SLOAN MISSOURI BASIN PROGRAM—WESTERN DIVISION AND FRYINGPAN-ARKANSAS PROJECT
- PICK-SLOAN MISSOURI BASIN PROGRAM—EASTERN DIVISION
- SALT LAKE CITY AREA/INTEGRATED PROJECTS  
COLORADO RIVER STORAGE, COLBRAN, RIO GRANDE, SEEDSKADEE AND DOLORES PROJECTS
- STATE BOUNDARIES
- REGIONAL OFFICE
- HEADQUARTERS
- ◆ COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER OFFICE

# Operational Summary<sup>1</sup>

(unaudited)  
(dollars in thousands)

	2017	2016	2015
Sales of electric power	\$915,025	\$893,663	\$979,696
Income transfers to generating agencies	(430,308)	(389,715)	(385,354)
Transmission and other operating revenues	531,421	464,721	412,415
Total operating expenses	794,556	726,360	731,164
Operation and maintenance	312,347	288,570	297,075
Purchased power	118,282	109,596	187,013
Purchased transmission services	179,179	149,943	78,947
Net interest expense	12,828	12,381	7,174
Net revenues	208,754	229,928	268,419
Completed utility plant	4,415,376	4,325,697	4,177,731
Payable to U.S. Treasury	646,970	594,368	622,064

<sup>1</sup> This summary represents WAPA's stand-alone operational information for the past three years. WAPA will publish its combined financial statements separately after the independent auditor's opinion is issued.



## Administrator and CEO's letter

W

APA has been serving customers—and their respective communities—across the West with at-cost, federal hydroelectric power for 40 years. Amid challenges and change, WAPA continues to deliver on its mission. If history is any indication, I am confident our dedication to service will guide us through this dynamic time and many decades to come.

Our mission was born from the rural electrification of the West. Our country's leaders developed a system for federally provided water and power so people could live more easily—and thrive—across our 15-state footprint. We are honored to deliver reliable power to communities that need it most.

Delivering power is about so much more than moving electrons. Our power and our services make a difference in communities we serve: for a community whose rates were going to significantly increase if we did not intervene, for a community whose vulnerable populations were suffering due to unreliable power, for a community that is able to attract businesses and grow due to its low electricity costs, and for a community that was in danger of losing its largest employer due to rising electricity prices. We make a difference in the communities we serve and in the lives of those who receive our power.

We operate differently than many other utilities and federal organizations. We are complex, organizationally and geographically. But at the end of the day—all the regulation, orders and policy aside—it is extraordinarily simple. It is not about philosophy or debate. It is not about profit or control. It is about keeping the lights on for 40 million Americans.

In all that we do, WAPA strives for business, technology and organizational excellence. For 40 years we have built a tradition of partnership, engagement and investment in our nation's infrastructure.

Each section of this report leads with a feature story that highlights the absolute best of what we do. Serving communities—and in some cases saving communities—is what public power is all about, and I am honored to be a small part of that larger story.

Sincerely,



Mark A. Gabriel  
Administrator and CEO





SERVING COMMUNITIES

SAVING COMMUNITIES

**S**ince 1977, WAPA has served communities across the West. For 40 years the organization has delivered on its mission to market and deliver clean, renewable, reliable hydroelectric power and related services.

Operating in a fast-paced and evolving industry, WAPA serves more than 700 customers in 15 states across a 1.4-million-square-mile footprint. Being responsive to customers' needs year after year for four decades requires not only agility, but partnership and a commitment to service. It requires understanding and, in many cases, anticipating customers' changing needs.

Serving customers is about availability, reliability, security and quality. It is about understanding how these variables translate to competitive advantages for the communities that receive WAPA's hydropower resource. It is about increased health, safety and productivity for communities who need it most.

Deadline by deadline, milestone by milestone and project by project, the collective efforts of WAPA employees serve customers and their respective communities. The stories spotlighted in this year's annual report demonstrate WAPA's commitment to serving communities, not only with cost-based electricity, but with opportunity and economic advantage.

Serving customers  
is about **availability,**  
**reliability, security**  
**and quality.**







Serving customers is about

**Availability**

**E**arly in 2017, Navajo Tribal Utility Authority, one of WAPA's longtime tribal customers, was facing a significant rate increase from services they received from another provider. They contacted WAPA to see if they could join the

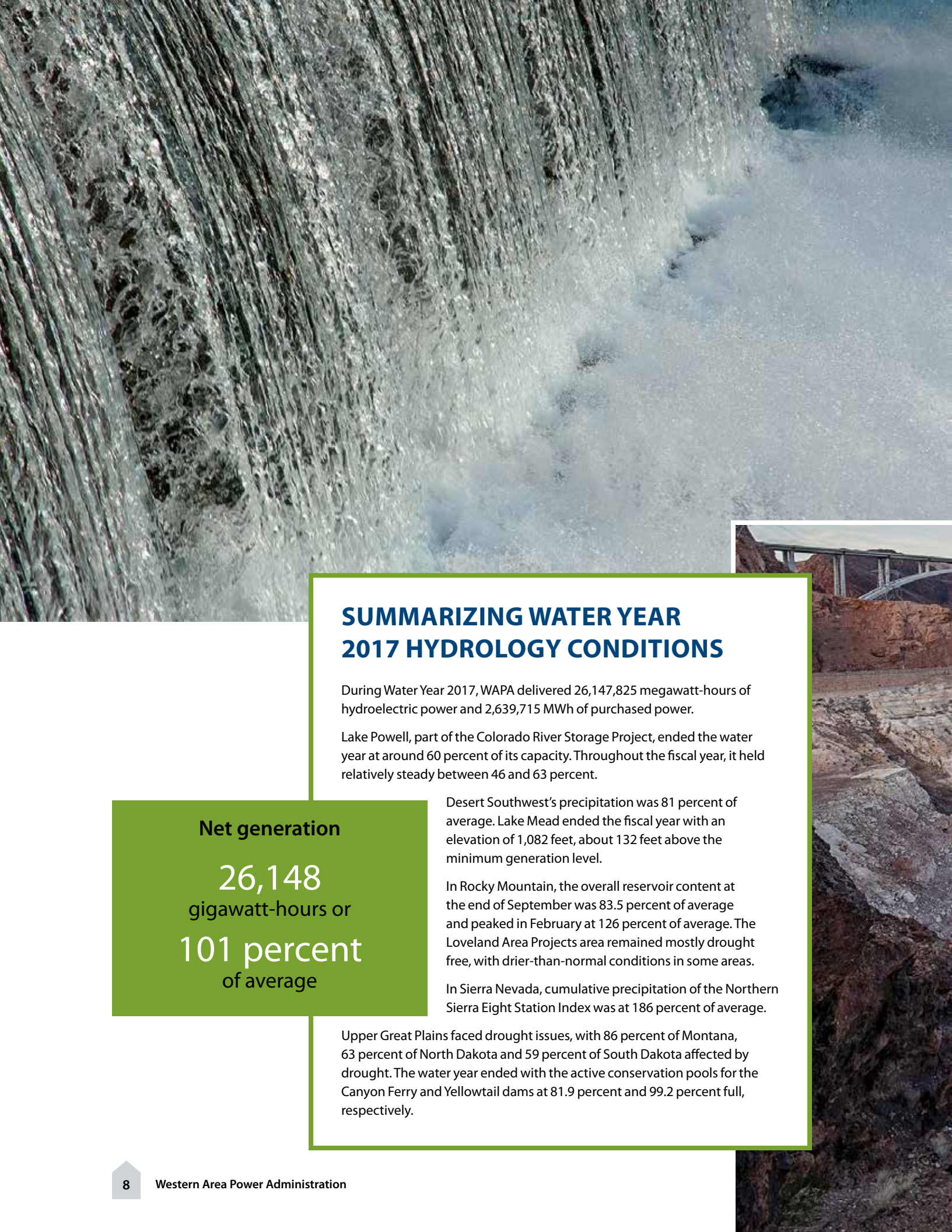
Western Area Colorado Missouri Balancing Authority to avoid the rate increase. WAPA worked quickly—accomplishing in seven weeks what would normally take several months—to get NTUA into the balancing authority before the deadline.

See the full story at  
[bit.ly/WAPA-ServingNTUA](https://bit.ly/WAPA-ServingNTUA)



**Agathla Peak stands seven miles outside of Kayenta, Arizona. WAPA customer Navajo Tribal Utility Authority serves a population that has a median income one-quarter the national average. Access to affordable services are crucial to quality of life on the Navajo Nation.**

Making our power and services available to communities that need it most is part of the legislation that guides WAPA's operations. The Flood Control Act of 1944 directs power marketing administrations to "... encourage the most widespread use ... at the lowest possible rates consistent with sound business principles ..." Hydrology conditions in a given year and excellent customer service also contribute to the availability of WAPA's hydropower resource.



## SUMMARIZING WATER YEAR 2017 HYDROLOGY CONDITIONS

During Water Year 2017, WAPA delivered 26,147,825 megawatt-hours of hydroelectric power and 2,639,715 MWh of purchased power.

Lake Powell, part of the Colorado River Storage Project, ended the water year at around 60 percent of its capacity. Throughout the fiscal year, it held relatively steady between 46 and 63 percent.

**Net generation**  
**26,148**  
gigawatt-hours or  
**101 percent**  
of average

Desert Southwest's precipitation was 81 percent of average. Lake Mead ended the fiscal year with an elevation of 1,082 feet, about 132 feet above the minimum generation level.

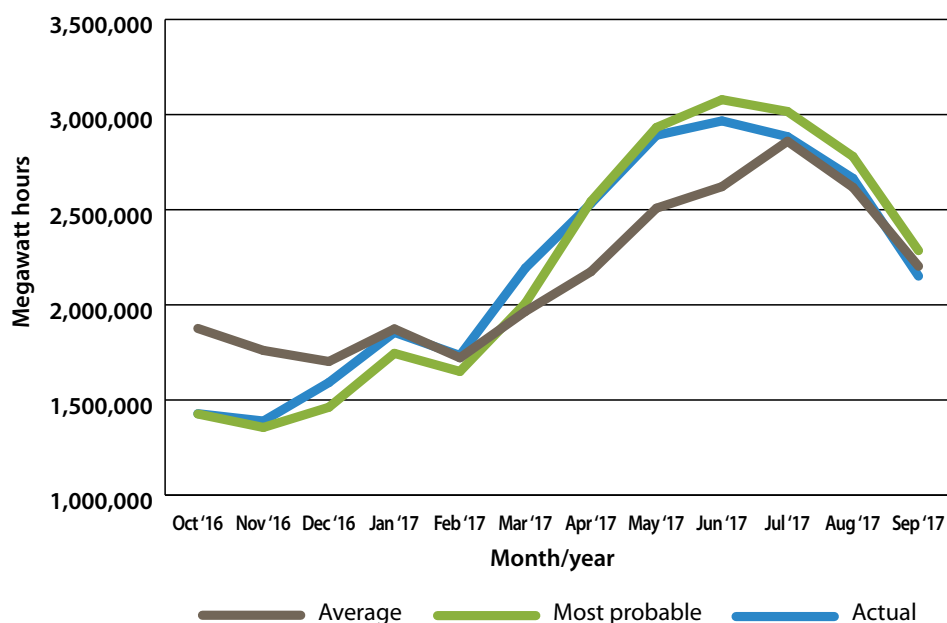
In Rocky Mountain, the overall reservoir content at the end of September was 83.5 percent of average and peaked in February at 126 percent of average. The Loveland Area Projects area remained mostly drought free, with drier-than-normal conditions in some areas.

In Sierra Nevada, cumulative precipitation of the Northern Sierra Eight Station Index was at 186 percent of average.

Upper Great Plains faced drought issues, with 86 percent of Montana, 63 percent of North Dakota and 59 percent of South Dakota affected by drought. The water year ended with the active conservation pools for the Canyon Ferry and Yellowtail dams at 81.9 percent and 99.2 percent full, respectively.



# Water Year 2017 Hydropower Generation Average vs. Most probable vs. Actual



## DEVELOPING TOOLS FOR NEW CUSTOMERS

During Fiscal Year, 2017 WAPA employees put the finishing touches on the nine-year remarketing effort for the Boulder Canyon Project, which required collaboration across WAPA's enterprise and with customers.

Most of the new contracts were signed the year before, and FY 2017 activities focused on implementation, specifically determining what data and preparations were needed to begin serving new customers.

Twenty-three of the 31 new BCP customers are Native American tribes, many of whom do not operate as a utility and therefore have no means to receive power from WAPA. To ensure those customers receive an equivalent economic benefit, WAPA partnered with local and tribal utilities to develop agreements and mechanisms through which the new customers would get the most value from their federal hydropower allocation.

To assist customers with access to information needed for planning and delivery of the resource, Information Technology worked with Power Marketing, Energy Management and Marketing, and Operations to develop a web-based user interface. This interface is one of the first software tools added to WAPA's new external customer portal. Using this portal, customers can view generation projections, unit outage information, capacity and energy allocations.



## ADVANCING ELECTRICITY EDUCATION, SUPPORTING STEM

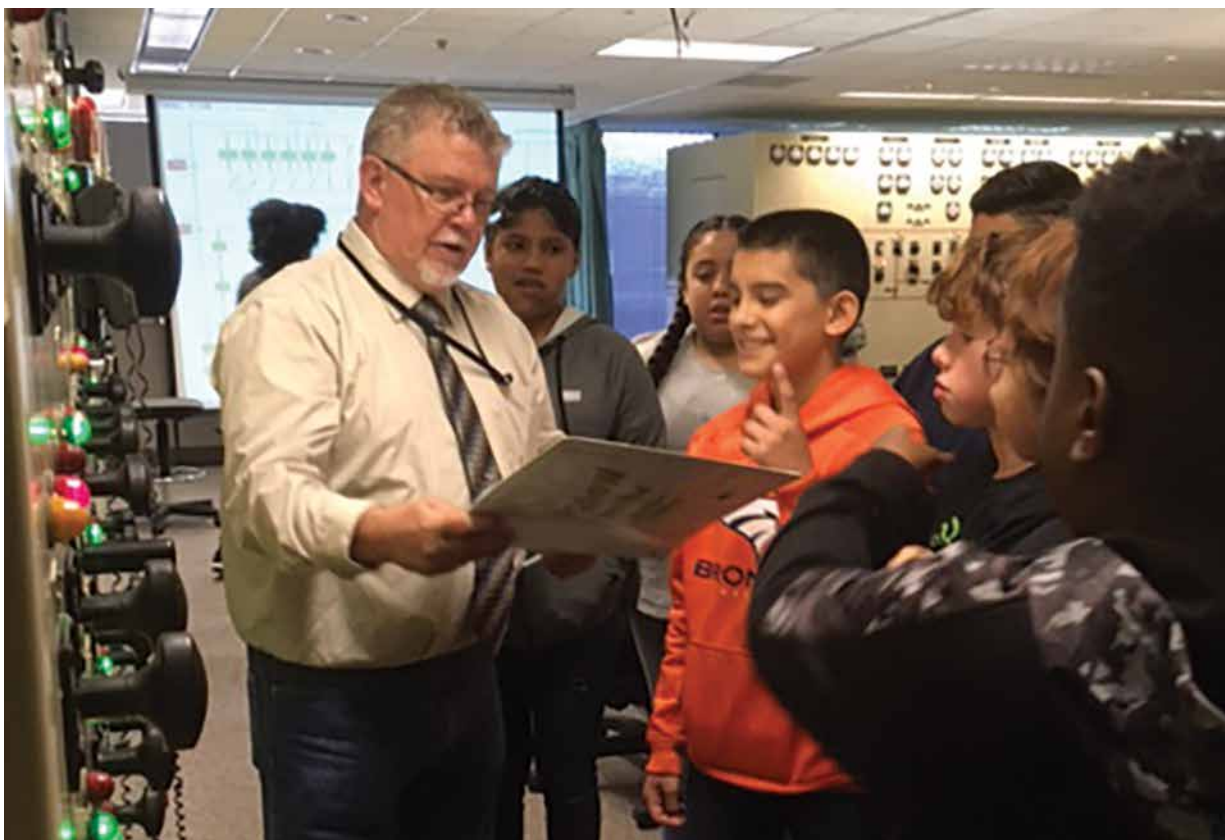
In May, Bear Valley International School, located in Denver, Colorado, visited WAPA's Electric Power Training Center for two days of hands-on learning about the energy industry and how electricity powers the world around them.

Students learned about primary electrical discoveries during the 1700s and 1800s. Afterward, they got to work on WAPA's Miniature Power System, which demonstrates how electricity is created, transmitted and distributed to the public. The students took turns in different roles operating the system and saw how different events affected the ability to get power to customers and households.

The event was a part of the CareerSpark Middle School Exploration program. Hands-on tours such as this one provide the critical first point of real-world exposure to students interested in STEM fields such as engineering, technology, advanced manufacturing, biomedicine and finance.







## DELIVERING THE POWER

### BOB EASTON

**Title:** Vice President of Transmission Services for CRSP MC, DSW and RM

**Region:** Rocky Mountain

**Location:** Loveland, CO

**When did you start at WAPA?** 1983

**What is the most interesting thing you have worked on?**

I've spent the past four years supporting the Mountain West Transmission Group's effort to analyze putting transmission systems into a joint tariff or full day-two market.

**How does your work serve WAPA's mission?**

It contributes to open access to our transmission system on a first-come, first-served transparent basis. We operate under a transmission tariff filed with the Federal Energy Regulatory Commission. Each transmission provider across the country has a similar tariff, which makes for a consistent process.



40th  
anniversary  
spotlight







Serving customers is about

**Reliability**

**A**

decade ago, WAPA began working with a small municipality in California. The city of Needles sees extreme heat in the summertime, endangering vulnerable populations who do not have reliable power. After accessing

WAPA's system, Needles saw both a 96-percent reduction in power outages and a 66-percent reduction in their retail cost of electricity. The utility is no longer collapsing and is able to pass along millions of dollars of savings to its customers. Small utilities make a difference to communities, and WAPA makes a difference to its customers.

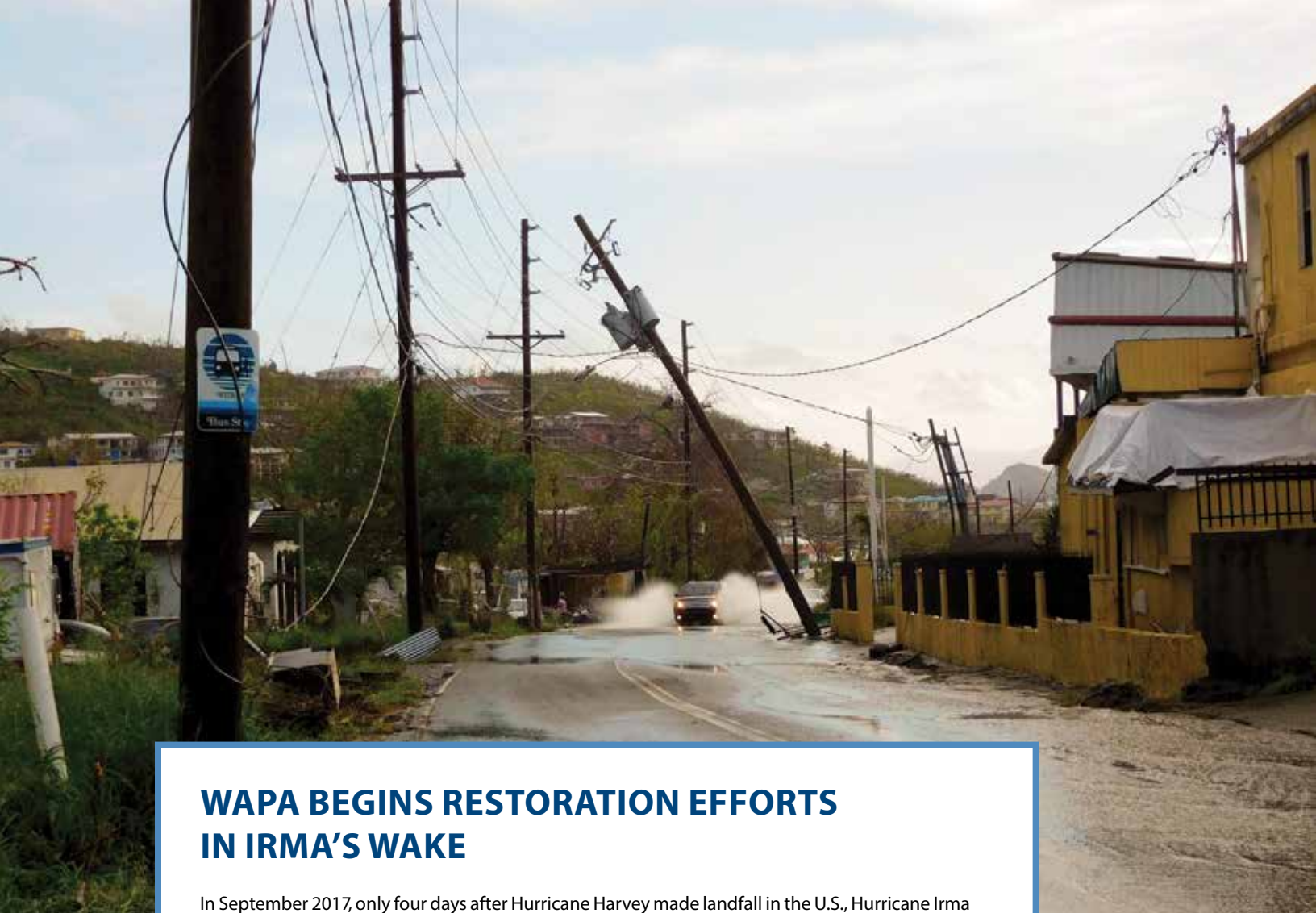
Serving customers and communities across the West with reliable power is central to WAPA's mission. People depend on it so much that they often do not even think about it until there is an outage. At WAPA, reliability is top of mind every minute of every day because serving customers demands it.

See the full story at  
[bit.ly/WAPA-RescuingNeedles](http://bit.ly/WAPA-RescuingNeedles)



**Needles Public Utility  
Authority Electric Line Crew  
Supervisor Jack Lindley  
stands in front of Bill Yoney  
Substation in Needles,  
California. After surveying  
the city's electrical system  
in 2007, Lindley reached  
out to WAPA to help  
increase reliability.**





## WAPA BEGINS RESTORATION EFFORTS IN IRMA'S WAKE

In September 2017, only four days after Hurricane Harvey made landfall in the U.S., Hurricane Irma formed. This Category 5 hurricane carved its way across the U.S. Virgin Islands and other nearby regions before working its way almost directly up central Florida.

WAPA moved quickly to deploy an eight-person advance team to the Virgin Islands in support of restoration efforts, with the Federal Emergency Management Agency authorizing a Special Mission Assignment on Sept. 13. By the evening of Sept. 17, the crew was on its way to help, an immediacy that drew praise from Secretary of Energy Rick Perry.

Unfortunately, Category 4 Hurricane Maria, the 10th most intense Atlantic hurricane in recorded history, struck Puerto Rico early Sept. 20, grounding the advance team.

While transportation to the Virgin Islands was arranged, the advance team provided valuable technical assistance to Puerto Rico Electric Public Authority in planning the first steps for the restoration of Puerto Rico's power.

On Sept. 23, the advance team was able to make it safely to St. Thomas.

Restoring stable power was the priority for the advance team, who worked with responders from the Department of Energy, FEMA and the Virgin Islands Water and Power Authority to repair the energy infrastructure and restore power as quickly and safely as possible. Following the advance team, additional line crews deployed to aid in the restoration.

WAPA's crews worked closely with FEMA, the DOE and the entire federal family to help the Virgin Islands Water and Power Authority rebuild the damaged infrastructure, restore power and safely address issues and obstacles as they were identified.

WAPA's deployed crews worked seven days a week, from sunrise to sunset, toward the goal of restoring power.





## Irma response by the numbers\*



### Equipment deployed

Digger derricks

3

Bucket trucks/manlifts

3

Miscellaneous trucks

3



### Equipment weight

255,800



### Deployed responders

23



### Support employees

43



### Hours worked

3,929

*Note: These numbers reflect work performed through Sept. 30, 2017. Restoration efforts continued into Fiscal Year 2018.*

## MARKETS EXPAND, DEVELOP WITHIN WAPA'S FOOTPRINT

Organized markets are expanding and developing within WAPA's footprint, bringing the potential to affect many facets of WAPA's business. To ensure WAPA is prepared to continue carrying out its mission amid a changing utility landscape, teams have been monitoring markets and engaging with stakeholders for years, taking into account unique project legislation and diverse customer needs.

WAPA evaluates benefits, costs, risks and opportunities associated with market-related developments, each of which are considered on a region-by-region and case-by-case basis to ensure WAPA continues to deliver the most value for customers.

### Anticipating, planning for market-related changes

In Fiscal Year 2017, about two dozen employees were involved in WAPA's Organizational Approach to Markets initiative. The OAM project team evaluated areas of WAPA's business likely to be affected if WAPA decides to participate in markets or to maintain its current approach. They developed recommendations to ensure readiness to carry out WAPA's mission in the changing utility landscape. Before the end of the fiscal year, they presented their findings and recommendations to WAPA's Power System Operations Council and Power Marketing Management Council for decision and implementation.

### Mountain West explores market membership

The Mountain West Transmission Group is a collaboration of electricity service providers—including WAPA's Loveland Area Projects and Colorado River Storage Project—working to develop strategies to adapt to the changing electric industry. The group, formed early in 2013, is evaluating market options in the West.

In September 2017, Mountain West announced its intention to continue discussions with Southwest Power Pool after determining that membership in SPP would provide opportunities to reduce customer costs and maximize use of resources and the grid.

The announcement came after substantial analysis, including a transmission cost-shift study, a projected market benefits study and an evaluation of proposals provided by four existing independent system operators on the costs of either managing a joint tariff or joining their regional market.

TO ENSURE WAPA IS PREPARED TO CONTINUE CARRYING OUT ITS MISSION AMID A CHANGING UTILITY LANDSCAPE, TEAMS HAVE BEEN MONITORING MARKETS AND ENGAGING WITH STAKEHOLDERS FOR YEARS, TAKING INTO ACCOUNT UNIQUE PROJECT LEGISLATION AND DIVERSE CUSTOMER NEEDS.

## CREWS RESTORE POWER AFTER HOLIDAY ICE STORM

A severe blizzard and massive ice storm knocked out power to many communities across Montana, North Dakota and South Dakota beginning Dec. 25, 2016.

Watertown, South Dakota, was hit the hardest; the nearby Summit Substation and transmission lines that serve it, along with several WAPA communication circuits used for power system control, were taken out of commission by the storm. Montana and southeast North Dakota also experienced outages.

The weight of the ice and strength of the wind took down optical ground wire on a number of transmission lines, resulting in communication failures to about 60 percent of substations in the affected areas.

Upper Great Plains employees—including those who were not on duty—leapt to action to restore power as quickly as possible. With the aid of snowcats and helicopters, linemen began assessing the damage. Crews dealt with ice, as much as a foot of snow, strong winds and road closures while repairing structures. Operations staff coordinated restoration activities with neighboring utilities.

UGP leveraged employees and equipment from across six states to repair the damage and restore service to affected customers.



Lines that lost service  
**2**



Substations that lost power  
**1**



Miles of line repaired  
**12**



Structures repaired  
**15**



### KEEPING THE LIGHTS ON

#### MICHAEL KIRWAN

**Title:** Supervisory Power System Dispatcher

**Region:** Upper Great Plains

**Location:** Watertown, SD

**When did you start at WAPA?** 2008

#### What do you wish people understood about your work?

Transmission Operations is a 24/7/365 commitment. The people I work with are dedicated to ensuring the lights stay on. We quickly make important operational decisions to ensure system reliability. In the past we have simultaneously dealt with blizzards and ice storms on one side of our system and lightning and tornados on the other.

#### How does your work serve WAPA's mission?

My team keeps the lights on in five states.



40th  
anniversary  
spotlight

Michael Kirwan passed away Nov. 24, 2017. WAPA wishes to express its condolences as well as its appreciation for his hard work and dedicated service to his country.





CLASS

1909





Serving customers is about

**Security**

**V**

alley City, the largest of eight power municipalities in North Dakota, has been a WAPA customer since 1977. Managing electricity costs is imperative to their economic health and growth. WAPA's cost-based rates help Valley City keep

electricity costs down for their end users—they tout the lowest electricity rates in a tri-state area. They also enjoy the high degree of reliability offered by WAPA. The collective result is a community that can attract more technology and manufacturing operations, which increases their economic security.

See the full story at  
[bit.ly/WAPA-PoweringValleyCity](http://bit.ly/WAPA-PoweringValleyCity)



**Valley City State University sits in the heart of Valley City, North Dakota. Valley City, a longtime WAPA customer, is a public power community able to offer low rates and a high degree of reliability to its consumers.**

Contributing to America's energy security and sustaining our nation's economic vitality is part of WAPA's vision. Electricity is the lifeblood of developed communities, allowing increased opportunity. Affordable electricity brings economic security and advantage, making a difference to every person receiving it.



## RATES REMAIN STABLE, DECREASE FOR 70 PERCENT OF CUSTOMERS

As a cornerstone of WAPA's mission, the organization reviews and modifies its rates annually, as appropriate, to keep them as low as possible while remaining consistent with sound business practices.

During a customer meeting in May 2017, it was announced that the Colorado River Storage Project Management Center's firm electric service rate for the Salt Lake City Area/Integrated Projects will remain unchanged for the ninth consecutive year.

The consistent rate is a result of tight management of operation and maintenance costs, as well as reduced purchase power needs due to higher water releases from Glen Canyon Dam for the past three years. Maintaining the rate provides WAPA customers with more predictable planning and budgeting for future years.

A five-mills-per-kilowatt-hour reduction to current composite rates, resulted in roughly **\$50 million** saved annually in power costs for customers.

Also in May, WAPA announced a proposed power rate decrease for customers in the Upper Great Plains and Rocky Mountain regions that buy federal hydropower from the Pick-Sloan Missouri Basin Program.

The reduction is a result of paying off a charge that was levied to help repay deferred drought costs. However, actual drought conditions proved to be less severe than originally expected, and the drought-adder change is being repaid ahead of schedule.

The change represents a five-mills-per-kilowatt-hour reduction to current composite rates, resulting in roughly \$50 million saved annually in power costs for customers across Colorado, Wyoming, Montana, Kansas, Nebraska, the Dakotas and the western sections of Minnesota and Iowa.

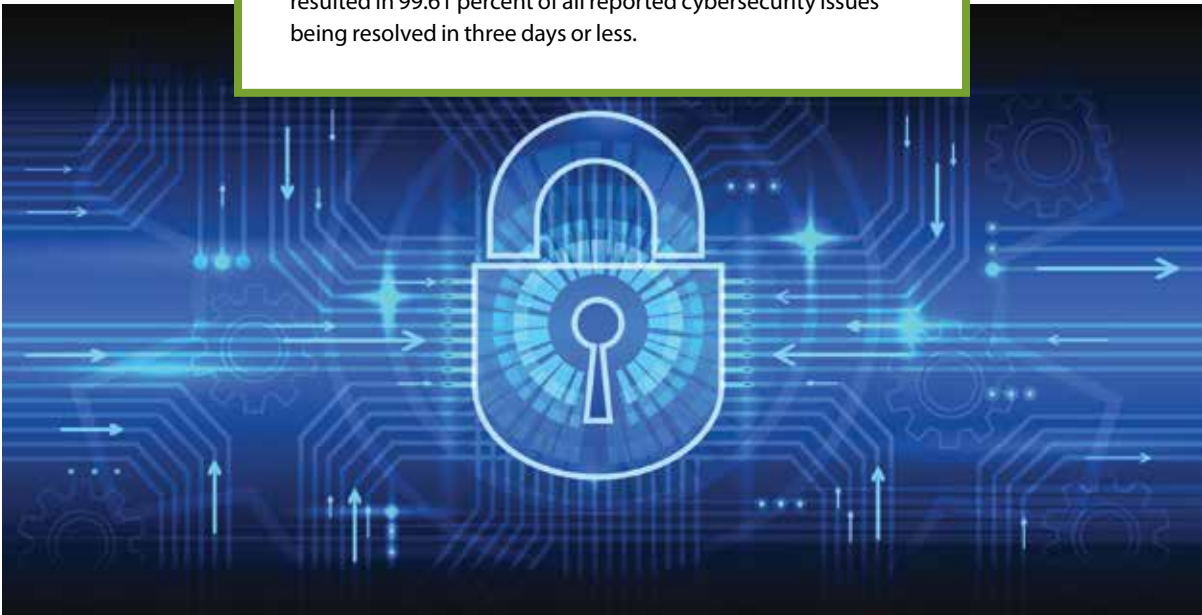
Adjustments like these are possible because of WAPA's attention to both customer needs and developments throughout its service area. They are also the result of WAPA working closely with its rate payers, asking questions and implementing ideas gleaned from customer feedback.

## RESOLVING ISSUES QUICKLY, PROTECTING INFRASTRUCTURE

**99.61 percent**  
of all reported  
cybersecurity issues  
resolved in three  
days or less

With each passing year, cybersecurity becomes more important. The rise of various networking platforms and smart devices means that people are both becoming more connected and more vulnerable to potential cyberattacks. For this reason, WAPA knows attacks on the infrastructure can adversely affect its service, its customers and the residents and businesses served by its at-cost federal hydropower.

WAPA worked diligently in FY 2017 to address potential cybersecurity issues quickly and efficiently. This resulted in 99.61 percent of all reported cybersecurity issues being resolved in three days or less.



## OPERATIONS CONSOLIDATION IMPROVES RELIABILITY

WAPA consolidated transmission operations in the Desert Southwest and Rocky Mountain regions and the Colorado River Storage Project Management Center on Dec. 13, 2016.

This consolidation allows the operations centers in Loveland, Colorado, and Phoenix, Arizona, to quickly assume control of each other's transmission systems in the event of failure or other emergency. It creates operational redundancy and enhances the reliable security of WAPA's power delivery.

This initiative exemplifies WAPA's commitment to evolving its transmission services in response to the demands of a changing industry and technology environment through operational excellence. The consolidation team performed rigorous testing for two months ahead of the consolidation to ensure a smooth transition for all involved.

Operating under a consolidated system and common tools and procedures is expected to reduce future costs of permitting and system upgrades by \$1.4 million while continuing to meet compliance requirements across the system.

Reduced future  
costs of permitting  
and system  
upgrades by  
**\$1.4 million**





## CREWS REPLACE STRUCTURES, IMPROVE POWER SECURITY

For almost three weeks in winter 2017, a total of 32 linemen from each of WAPA's regions came together to replace 70 aging wood structures on the 161-kilovolt Gila-to-Welton Mohawk transmission line, ensuring the security of power delivery for the customers who rely on it.

**32**  
linemen came  
together  
to replace  
**70**  
aging wood  
structures.

The project was more complicated than usual, as the transmission line's easement passes through multiple RV parks. This meant that the multi-regional team had to work around fences, parked RVs and other obstacles to complete the replacements.

The transmission line also crosses residential roads with regular vehicle and pedestrian traffic, and a number of structures were located near a softball park, golf course and hiking trail. Further complications were caused by structures in close proximity to a railroad line, which required crews to work with Union Pacific to coordinate replacement efforts with train schedules. Other structures were located near cultural and historical sites, which required a cultural monitor to be present during replacement.

Additionally, potential biological issues involving the desert tortoise required crews to be educated about the threatened species, how to reduce adverse effects to its environment and what to do if a tortoise were encountered.

The project was completed without incident; with public safety, health, environmental and biological considerations all handled properly; and with the residents and businesses who rely on power delivered through the line able to feel secure about the reliability of WAPA's infrastructure.



## MITIGATING RISK, SECURING FACILITIES

In Fiscal Year 2017, WAPA continued making great strides to assess and mitigate potential risks to physical security at its facilities. This was accomplished through a number of different actions and improvements, including replacing warning signs and locks, repairing gates and more.

WAPA closed out all 367 scheduled remediation findings. WAPA also awarded a \$25 million contract to further secure its facilities, illustrating organizational dedication to protecting customers'—and the nation's—infrastructure.

WAPA closed out  
**100 percent**  
of scheduled  
remediation findings.



### SECURING THE SYSTEMS

#### DOROTHY ENGDAHL

**Title:** Maintenance Management Specialist

**Region:** Sierra Nevada

**Location:** Redding, CA

**When did you start at WAPA?** 1988

**What is the most interesting thing you have worked on?**

Over the past one and a half years, I served on the Critical Infrastructure Protection Version 5 Standards transition team. Although it was a lot of work, it was interesting to implement a new process to track CIP assets and learn the impacts they have on so many different areas.

**How does your work serve WAPA's mission?**

Many people just think of me as "the Maximo person," but the work I do affects reliability, costs and compliance as well.



40th  
anniversary  
spotlight

Maximo is WAPA's asset management system.









Serving customers is about

Quality

**I**n the early 1980s, the city of Weaverville was paying nearly the highest electricity rates in California. Because of that, a local lumber mill—the county’s largest employer—closed. The people of Weaverville organized and created a publicly owned utility, giving them access to an allocation of power from WAPA. The partnership with WAPA cut rates by one-third, keeping more than \$10 million a year in the community.

See the full story at  
[bit.ly/WAPA-SavingWeaverville](https://bit.ly/WAPA-SavingWeaverville)



**Dick Morris, a founder of Trinity Public Utilities District who still serves as a board member, sits in his backyard in Weaverville, California.**

**Having become a WAPA customer in the 1980s, their now-affordable and stable rates contribute to the community’s quality of life.**


Providing a quality product and quality customer service is key to all WAPA operations because at-cost power directly affects the quality of life for the communities WAPA customers serve. WAPA employees work around the clock in offices, in the field and in operations centers, not only to keep the power flowing, but to identify ways to improve processes and services.

## RECOGNIZING CUSTOMER FOR RENEWABLE, ENGAGEMENT EFFORTS

Moorhead Public Service, in Moorhead, Minnesota, was recognized with WAPA's prestigious Administrator's Award at a Public Power Week ceremony on Oct. 4, 2016. The award was given for the utility's well-earned recognition for providing its customers with the choices they need to save energy, money and the environment.

Moorhead Public Service launched its customer-driven Capture the Wind program years before the industry was talking about community renewable projects. With more than 400 customers, Capture the Wind has effectively prevented more than 16 million pounds of greenhouse gas emissions and boasts a 7-percent customer participation rate, one of the highest participation rates per capita in the nation. The successful program was followed by Capture the Sun, a community solar garden project, in 2015.

Good business also means investing in infrastructure, which MPS did by building a new high-service pumping station. The purpose of the project was to replace outdated equipment and to update backup generation for pumps and an adjacent facility. Installing new variable-frequency, drive-powered pumps reduced the station's energy use and costs and improved overall system operations.



Capture the Wind has  
effectively prevented  
more than  
**16 million**  
pounds of greenhouse  
gas emissions and boasts a  
**7-percent**  
customer participation rate.



## KEEPING UP WITH SAFETY STANDARDS

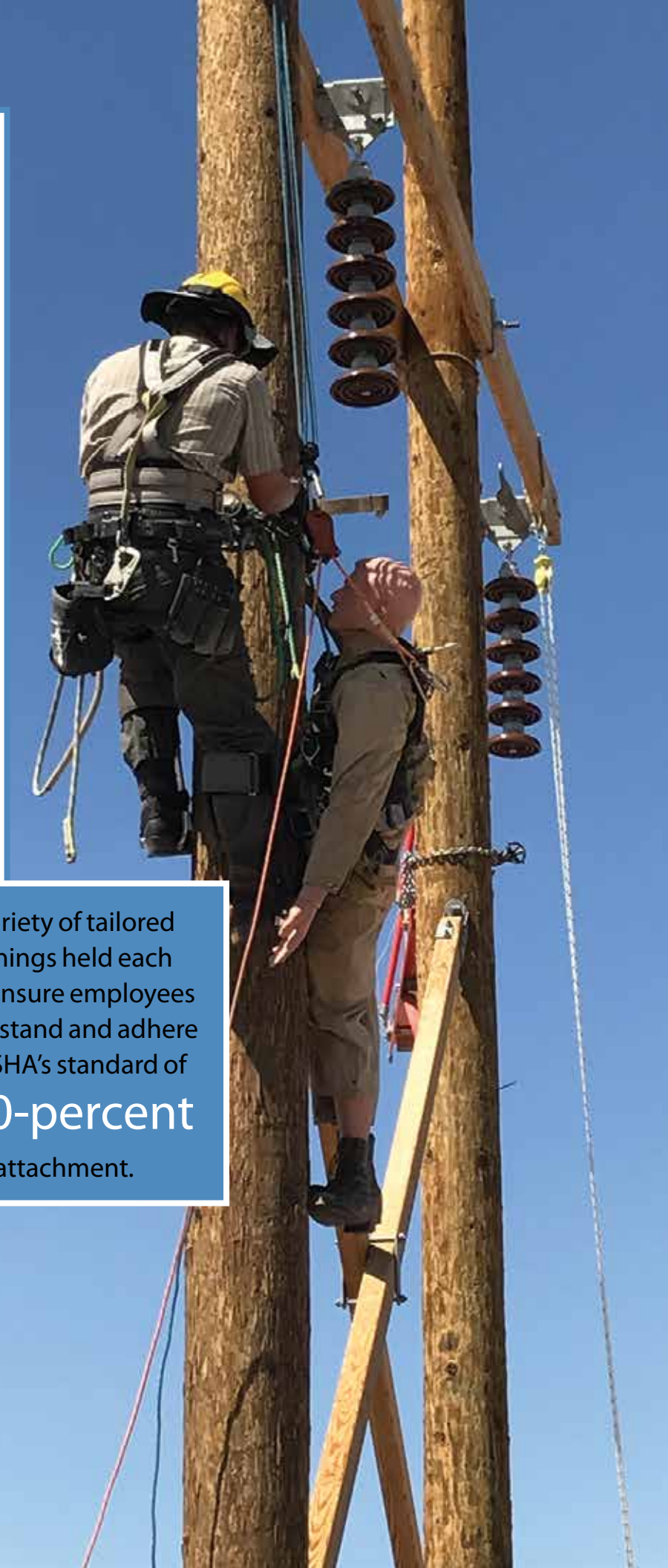
WAPA trains its craft employees in Fall Protection regularly to ensure employees understand and adhere to the Occupational Safety and Health Administration's standard of 100-percent attachment when working at 4 feet above the ground or higher.

WAPA's Fall Protection Committee and its subcommittees hold trainings for new employees and to retrain current employees and trainers. Training includes both classroom instruction and hands-on tasks with competency tests to ensure skill retention.

Training is most often held at Mead Substation in Nevada. In Fiscal Year 2017, Mead hosted fall protection training events for new craft employees, fall protection trainers and electricians.

Employees across WAPA's 15-state footprint are trained on the fall protection program, equipment, safe climbing techniques and fall rescues. Bringing employees from different regions together allows training and evaluation for all 25 line crews to be consistent, and to ensure all relevant employees receive the same training on new OSHA regulations and equipment.

A variety of tailored trainings held each year ensure employees understand and adhere to OSHA's standard of **100-percent** attachment.





## IMPROVING TRANSMISSION LINE HEALTH EVALUATIONS

WAPA's commitment to quality is reflected in a major initiative this year to change the way the organization assesses the health of its transmission infrastructure.

Previously, transmission line health assessments were made based on the general age of the entire line. Under that system, a line installed 40 years ago would have a lower health rating than one installed 20 years ago, regardless of how many components had been replaced or the condition of each structure. The new, more accurate system takes into account many additional factors based on actual inspection data.

The project's initial steps were taken on Feb. 10, 2017, migrating the data for 10 transmission lines and their 2,400 corresponding structures, along with new code and calculations, to Maximo and TIBCO.

### What is Maximo?

Maximo is WAPA's enterprise asset, inventory and work management system. It is used to manage the organization's asset lifecycles, inventory lifecycles and maintenance and compliance programs. Maximo has also been used to calculate transformer and breaker health.

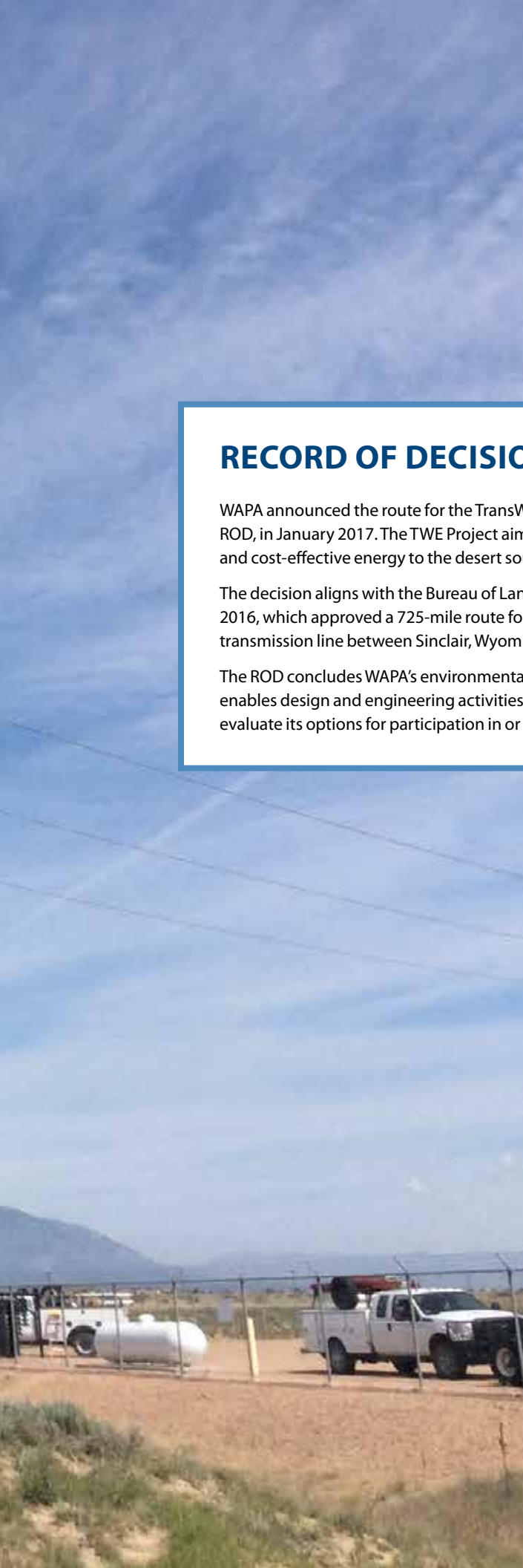
### What is TIBCO?

TIBCO is WAPA's standard integration platform, used to transfer data between applications across the organization's Information Technology landscape. TIBCO allows the same set of data to be published from one system to others across the enterprise, reducing the cost of integration and helping to ensure consistency of data.

Progress on the initiative has been strong, with September's goal of migrating health data for 200 transmission lines to the new system being met in August.

Ultimately, this project—which involves the combined efforts of Information Technology and Asset Management—will improve WAPA's ability to manage the quality of its transmission on a more granular level, ensuring that the health of each of its lines is accurate and consistent.





ROD approves a  
**725-mile**  
route for the extra-high-  
voltage, direct-current  
transmission line

## RECORD OF DECISION ISSUED FOR TWE

WAPA announced the route for the TransWest Express Project with a record of decision, or ROD, in January 2017. The TWE Project aims to strengthen the grid by providing reliable and cost-effective energy to the desert southwest region of the United States.

The decision aligns with the Bureau of Land Management's ROD, issued in December 2016, which approved a 725-mile route for the extra-high-voltage, direct-current transmission line between Sinclair, Wyoming, and Boulder City, Nevada.

The ROD concludes WAPA's environmental review of the TWE Project. This decision enables design and engineering activities to proceed, which will help WAPA better evaluate its options for participation in or financing of the project.

### IMPROVING THE EXPERIENCE

#### ELEANORA BERGSTRESER

**Title:** Accounting Clerk II

**Region:** Headquarters

**Location:** Lakewood, CO

**When did you start at WAPA?** 2016

**What is the most interesting thing you have worked on?**

When I started, I was tasked with scanning and archiving documents dating back to 2003. It helped me appreciate the importance of staying up to date with work and technology. Being able to search electronically is simpler, efficient and cleaner.

**How does your work serve WAPA's mission?**

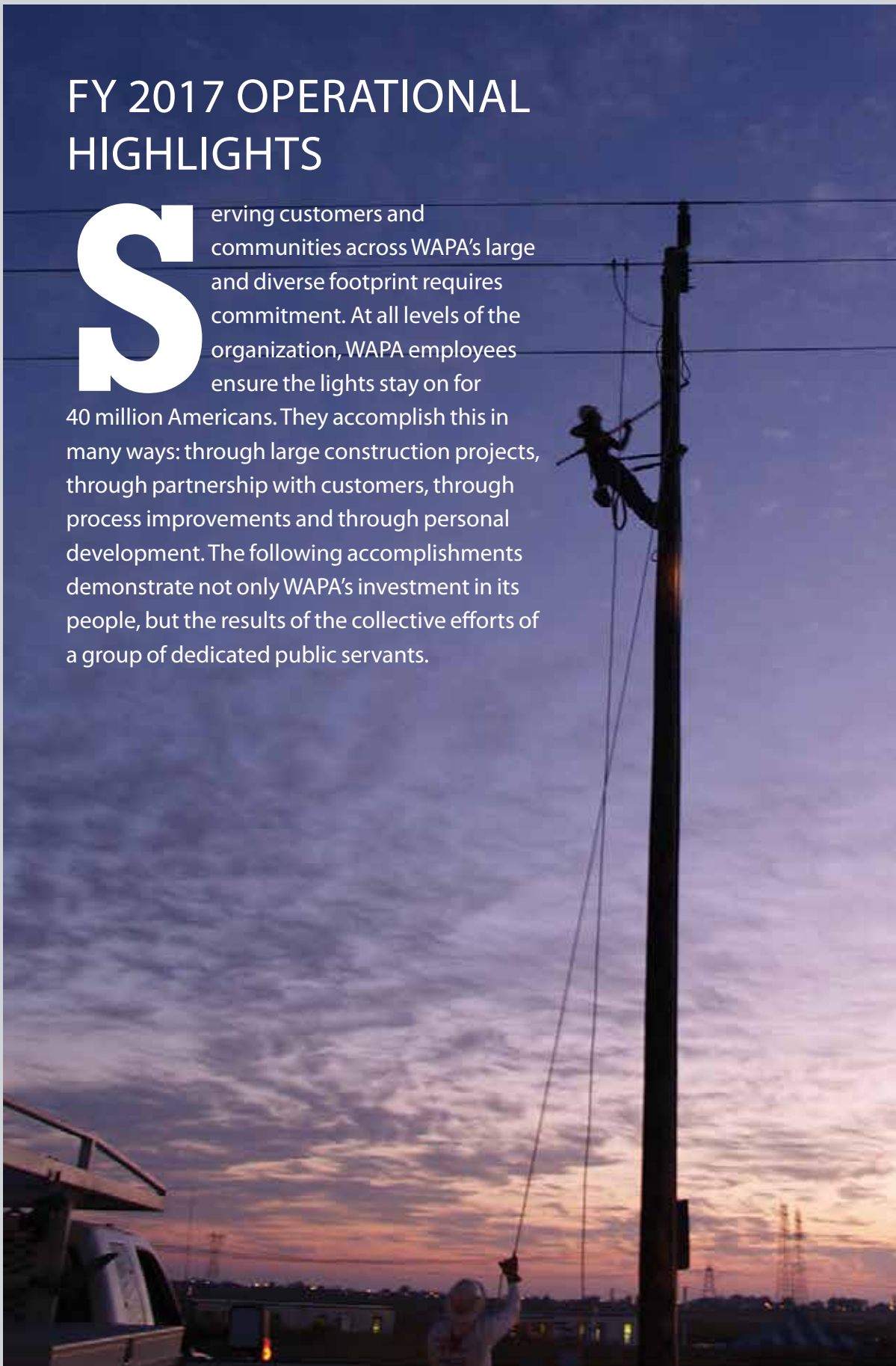
My team works together to ensure we are completing tasks before they are due. Helping to make the workflow more efficient saves time and provides opportunities to learn more.



40th  
anniversary  
spotlight

# FY 2017 OPERATIONAL HIGHLIGHTS

**S**erving customers and communities across WAPA's large and diverse footprint requires commitment. At all levels of the organization, WAPA employees ensure the lights stay on for 40 million Americans. They accomplish this in many ways: through large construction projects, through partnership with customers, through process improvements and through personal development. The following accomplishments demonstrate not only WAPA's investment in its people, but the results of the collective efforts of a group of dedicated public servants.





## Continuing culture of improvement

To ensure WAPA continues to maximize the value of the services it provides, the organization launched a Continuous Process Improvement program in Fiscal Year 2014. Through three different types of projects, employees identify cost-avoidance strategies and streamline operations.

To date, the CPI program has realized a 172-percent return on investment and reached a milestone of \$55 million in saved or avoided costs.

WAPA invests in employees to attain Green Belt certification in the Lean Six Sigma methodology and then lead process improvement projects at all levels of the organization. WAPA also supports employees who drive their own innovations and initiatives. These projects, called “Just Do It” efforts, identify cost-avoidance, improve processes and deliver additional value to customers.

Formal CPI projects completed in FY 2017 span all regions and many functions:

- Purchase Request process
- 10-year planning appropriations allocations
- Cap and trade project
- Office reservations
- Local Insider Threat Working Group
- Records Management

### CPI results for FY 2017

# of Green Belts  
certified

5

# of projects completed

25

Cost savings or  
avoidance

\$36+  
million



## DOE recognizes WAPA best practices

WAPA was recognized for its organizational transformation in the 2016 Department of Energy's Best Practices publication. WAPA was one of only 18 organizations from the DOE highlighted in the report. The report contains examples of best practices in 12 different categories. WAPA was highlighted in the Leadership and Organizational Transformation section of the report, which outlines how WAPA's operational requirements align with strategic guidance to improve mission execution. The report cites WAPA's achievements using its Strategic Roadmap to realign resources, business practices and integrate operations and maintenance processes. WAPA's Change Management and Continuous Process Improvement programs were integral to implementing its strategic vision of a new organizational identity.

## Equipping workforce with I+D tools, principles

WAPA launched an Inclusion and Diversity Committee in 2016, made up of employees from across the organization to provide enterprisewide leadership toward a sustainable and meaningful inclusion and diversity program.



In Fiscal Year 2017, the IDC focused its work on communication, training and embedding inclusive practices in daily operations. The IDC targeted high-profile placement in internal publications, the organization's intranet, all-employee meetings and facilities across the organizational footprint. The IDC also developed an educational video, a toolbox of resources for supervisors and recruitment and onboarding materials.

The IDC organized five training sessions across WAPA that reached 130 employees. They also hosted roadshows at seven locations teaching employees about the IDC mission, offering fundamental inclusion and diversity concepts and equipping employees to identify and overcome unconscious bias. Roadshows focused on making the business and personal case for inclusion, and demonstrated how these principles aren't simply a new initiative, but strategically tied to organizational goals.

## Refreshing the Roadmap

WAPA developed its *Strategic Roadmap 2024* in 2014. Built into the Roadmap were plans to evaluate and refresh it every two years to ensure the organization remains focused on meeting customers' needs, aligned with Department of Energy goals and responsive to industry change.

In October 2016, WAPA completed its first Roadmap Refresh, finding that much of the original plan remained sound and has served the organization well.

The changes made in the refresh ensure WAPA is focused on the most important and most strategic areas. WAPA reduced its number of strategic targets from seven to five and its number of initiatives from 33 to 19. Also, three cross-cutting strategic enablers were identified that resonate with, support and contribute to all strategic targets. Additionally, the plan was made to be more inclusive so every WAPA employee can clearly see how he or she contributes to fulfilling the mission.

For 40 years, WAPA employees have been dedicated to public service. WAPA will continue to use this refreshed Roadmap to pave the way for a secure, affordable and reliable energy future.



## Promoting inclusion, recognizing innovation

In May 2017, WAPA held its second Inclusion, Innovation and Technology Summit to recognize and celebrate WAPA's innovators. The 2017 event highlighted the role inclusion plays in unlocking innovation.

The event kicked off with speakers from WAPA, a retired Electric Power Research Institute fellow and the chairman of the California Energy Commission. It included a panel of NASA employees central to leading its inclusion and innovation program. It also featured a hack-a-thon-style innovation challenge that pushed teams to solve a problem leveraging inclusion and creativity.

As evidenced by those who won awards, innovators are found throughout WAPA—they represent accounting, information technology, environment, legal, engineering, operations, the craft and support services.

Thirty WAPA employees were recognized for their innovative work on six projects.

- Automated Digital Accountability and Transparency Act Spend Reporting Requirement
- Endangered Species Act Clearance for San Luis Transmission Project
- GE/Harris D20 RTU Replacement Initiative
- iTOA Interactive Voice Recognition Access System
- Secure Enclave Support Centers Implementation Project
- Southwest Area Transmission Short Circuit Model Collaboration SharePoint Site

## Developing leaders

Two of WAPA's leadership programs wrapped up in the spring of 2017: The second class of the Leadership Emergence and Development program and the inaugural class of the Craft Leadership Development Program.

Seven employees graduated, March 10, from WAPA's LEAD program. The 18-month program was designed to give participants a comprehensive leadership experience including coursework, visits to various WAPA offices, briefings about the organization's programs and opportunities to lead a change initiative.

Twelve employees graduated, April 11, from WAPA's CLDP. The two-year program kicked off in 2015 to provide journeymen craft employees with the opportunity to strengthen their leadership skills and competencies, as well as broaden their knowledge of WAPA. The CLDP is a one-of-a-kind program in the electric utility industry.

WAPA's leadership framework was developed in 2013. Multiple programs were strategically crafted to develop a diverse cadre of ready-now leaders at different levels of the organization. All programs align with WAPA's 13 leadership competencies and support the Department of Energy's Strategic Human Capital Plan.



## PEOPLE AND DOLLARS

**H**ow WAPA effectively applies and manages its resources—a workforce of 1,442 federal employees and a \$1 billion program—is central to its success in delivering on its mission and operating safely, securely and reliably. Below is an illustration of where WAPA's people and dollars were deployed in Fiscal Year 2017.

Almost half of WAPA's employees supported the reliability of the electric grid, and the largest percentage of funds was attributed to the agency's marketing function, which includes purchase power and wheeling.

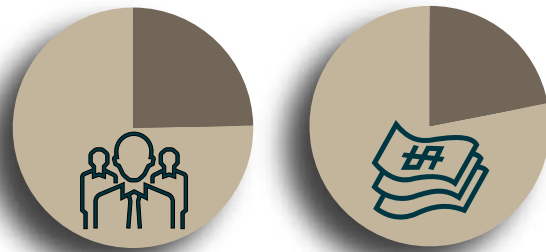
These figures do not include resources assigned to and paid for by the Transmission Infrastructure Program.

### Reliability



**652 people** and **27 percent**  
of dollars invested in maintenance  
and related areas

### Delivery



**355 people** and **21 percent**  
of dollars dedicated to power operations  
and engineering areas

### Marketing

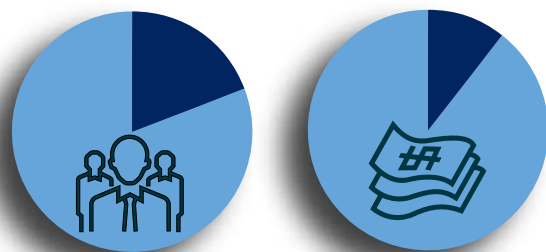
including purchase power and wheeling



**165 people** and **41 percent**  
of dollars committed to power marketing areas

### Cost-based

and related services



**290 people** and **11 percent**  
of dollars applied to support the mission



## CUSTOMER IRP SUMMARY

**W**APA's Integrated Resource Planning requirements, outlined in Section 114 of the Energy Policy Act of 1992, give customers several options to comply with the law's energy-planning clauses. Under these requirements, customers must submit annual progress reports and new integrated resource plans every five years, either individually or cooperatively. Customers who meet specific criteria are also allowed to choose from three additional IRP reporting options—small customer plans, minimum investment reports or energy efficiency and renewable energy reports—instead of a full IRP. All firm electric power customers have submitted one of these options.

### Top 5 demand-side management activities:    Top 5 renewable energy resource choices:

- Lighting
- Audits
- Air conditioning upgrades
- Rebates
- Water heating
- Wind
- Solar
- Small hydro
- Biogas/mass
- Green/white tags

### Customer IRP Accomplishments

Item	CRSP MC <sup>1</sup>	DSW	RM	SN	UGP	Totals
DSM <sup>2</sup> savings (kW)	337,691	122,850	337,192	219,994	1,839,451	2,857,178
DSM savings (kWh)	78,172,229	713,927,514	827,847,736	293,841,302	426,094,210	2,339,882,991
DSM expenditure (\$)	18,901,897	69,851,410	31,127,896	42,863,967	43,715,098	206,460,268
DSM deviations <sup>3</sup> (\$)	44,010	-2,445,682	-1,645,274	4,747,837	3,191,293	3,892,184
Renewables (kW)	412,029	477,076	1,117,149	1,850,161	2,124,366	5,980,781
Renewables (kWh)	1,239,363,300	2,023,122,594	4,103,774,752	7,946,926,244	8,007,225,723	23,320,412,613
Renewable expenditure (\$)	41,398,311	39,844,502	174,244,977	314,816,888	137,161,902	707,466,580
Renewable program types	Wind, hydro, waste heat, biogas	Green tags, solar, wind, hydro, geothermal, biogas/mass	Wind, hydro, solar, biogas/mass, green tags	Solar, hydro, biogas/mass, wind, geothermal	Wind, biogas/mass, green tags, solar, hydro	Wind, solar, hydro, biogas/mass, green tags
Top 5 most frequent DSM activities	AC, lighting, refrigerator/freezer, rebates, water heating	Lighting, AC, rebates, audits, refrigerator/freezer	Lighting, audits, water heating, rebates, AC	Lighting, audits, refrigerator/freezer, rebates, AC	Lighting, AC, heating, rebates, audits	Lighting, audits, AC, rebates, water heating
Top 5 renewable energy activities	Solar, biogas/mass, wind, hydro, geothermal	Geothermal, solar, hydro, wind, biomass	Wind, hydro, solar, biogas/mass, green tags	Solar, hydro, biogas/mass, wind, geothermal	Wind, biogas/mass, green tags, solar, hydro	Wind, solar, hydro, biogas/mass, green tags
# of IRPs from customers	23	15	23	12	12	85
# of IRPs from cooperatives	7 (comprised of 86 entries in total)	0	0	0	0	7
# of MIRs	0	2	3	3	17	25
# of SCPs	0	12	20	32	11	75
# of EE/RE reports	0	0	0	0	0	0

<sup>1</sup> WAPA's Colorado River Storage Project Management Center reports on the calendar year rather than the fiscal year. These numbers reflect CY 2016, rather than FY 2017.

<sup>2</sup> DSM refers to demand-side management activities the utility conducts to change customer energy use.

<sup>3</sup> Deviations are any difference from the customer's integrated resource plan.

# Senior Executive Team\*

Administrator and Chief Executive Officer	MARK A. GABRIEL
Executive Vice President and Chief Operating Officer (retired)	TONY MONTOYA
SVP and Chief Financial Officer	DENNIS SULLIVAN
SVP and Chief Information Officer	DAWN ROTH LINDELL
SVP and Assistant Administrator for Corporate Liaison (acting)	TREVOR UPDEGRAFF
SVP and General Counsel	JOHN BREMER
SVP and Transmission Infrastructure Program Manager	TRACEY LeBEAU
SVP and Colorado River Storage Project Management Center Manager (acting)	STEVE JOHNSON
SVP and Desert Southwest Regional Manager	RON MOULTON
SVP and Rocky Mountain Regional Manager	MIKE McELHANY
SVP and Sierra Nevada Regional Manager	SUBHASH PALURU
SVP and Upper Great Plains Regional Manager	JODY SUNDSTED
EX-OFFICIO MEMBERS	
Power Marketing Advisor	RODNEY BAILEY
Chief of Staff	ERIN GREEN
Economic Impact and Diversity Manager	CHARLES MARQUEZ
Chief Public Affairs Officer	TERESA PLANT
Chief Strategy Officer	JENNIFER RODGERS

\* NOTE: This information reflects the Senior Executive Team as of Dec. 31, 2017.



# Contact WAPA

Call or write your local WAPA office or Public Affairs in Lakewood, Colorado, to share your comments or to find out more about WAPA.

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**COLORADO RIVER STORAGE PROJECT  
MANAGEMENT CENTER**

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**ROCKY MOUNTAIN REGIONAL OFFICE**

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Folsom, CA 95630-4710  
916.353.4416

**UPPER GREAT PLAINS REGIONAL OFFICE**

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Visit our website at [www.wapa.gov](http://www.wapa.gov).

Send email to [publicaffairs@wapa.gov](mailto:publicaffairs@wapa.gov).

For no-cost, energy-related technical assistance within WAPA's service territory,  
call 1.800.POWERLN (1.800.769.3756), or log on to [www.wapa.gov/es](http://www.wapa.gov/es).

SERVING COMMUNITIES

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**Western Area  
Power Administration**

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